AMSAT News Service Weekly Bulletins
Issue: ANS-061
Date: 2014-03-02
Sources: amsat-ans-2014-ans-061-weekly-hyperkitty-15d6ba8737.txt

---

AMSAT NEWS SERVICE
ANS-061

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an
active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

Please send any amateur satellite news or reports to:
ans-editor(a)amsat.org

In this edition:

* ISS Amateur Radio CubeSats Deployed
* Successful launch of ham radio satellites
* LituanicaSAT-1 Lithuanian CubeSat
* LitSat-1 with linear transponder deployed
* ITF-1 CubeSat Team Request Reports
* AMSAT at the Dayton Hamvention -- First call for volunteers
* Free Online Course -- Space Systems Engineering 101
* Free NASA Online Course -- Teaching Tomorrow's Engineers
* Ham Video Commissioning now scheduled
* ARISS News
* Satellite Shorts From All Over

SB SAT @ AMSAT $ANS-061.01
ANS-061 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 061.01
>From AMSAT HQ SILVER SPRING, MD.
March 2, 2014
To All RADIO AMATEURS
BID: $ANS-061.01

ISS Amateur Radio CubeSats Deployed

On Friday, February 28, 2014 at 0730 UT astronaut Koichi Wakata KC5ZTA deployed a batch of amateur radio CubeSats from the International Space Station (ISS).

LituanicaSAT-1, LitSat-1, ArduSat-2 (2U), UAPSAT and the 915 MHz SkyCube were successfully ejected from a NanoRacks deployment pod.

At 0855 UT Dmitry Pashkov UB4UAD received the LituanicaSAT-1 beacon. and received LitSat-1 at 1030 UT.

At 1022 UT Mike Rupprecht DK3WN received LitSat-1. Mike had heard UAPSAT at 0845 UT.

The Peruvian Chasqui 1 CubeSat was also onboard the ISS. At the time of writing it is unclear if this has also deployed.

Frequency information at
http://tinyurl.com/ANS-061-ISS-Cubes

UB4UAD website in Google English http://tinyurl.com/UB4UAD

DK3WN satellite blog http://www.dk3wn.info/p/

[ANS thanks AMSAT-UK for the above information]

Successful launch of ham radio satellites

On Thursday, February 27 at 1837 UT a cluster of Japanese amateur radio satellites were launched from the Yoshinobu Launch Complex at the Tanegashima Space Center

At 1948 UT Francisco Jimenez-Martin Sanchez EA1JM received the 437.325 CW (A1A) beacon from the ARTSAT1:INVADER CubeSat

Also on the first pass at 1952 UT Jan van Gils PE0SAT received
OPUSat
STARS-II (comprises Mother and Daughter satellites)
TelkyoSat-3
ShindaiSat-1
ARTSat1:INVADER

The student team that developed the ITF-1 CubeSat would appreciate any reports of their satellite on 437.525 MHz FM Morse code, see http://amsat-uk.org/2014/02/26/itf-1-cubesat-team-request-reports/

Frequencies and further information on these satellites is at http://tinyurl.com/ANS-061-JapaneseHamSats

[ANS thanks AMSAT-UK for the above information]

LituanicaSAT-1 Lithuanian CubeSat

The amateur radio CubeSat LituanicaSAT-1, call sign LY5N, was developed by Lithuanian university students and young engineers and was deployed from the International Space Station (ISS) on Friday, February 28.

The team ask radio amateurs and SWL’s to listen for the FM Morse code beacon on 437.275 MHz after deployment and submit reports (see Tracking below). They say there will be Mission emblem stickers with signed QSL cards and for the first 10 registered reports, LituanicaSAT-1 branded note books!

The tiny satellite is just 10x10x10 cm with a mass of 1.090 kg yet it has a VGA camera and a 145/435 MHz FM voice transponder, designed and built by Lithuanian radio amateurs.

The prototype of the FM repeater has been operating in the home of its designer Žilvinas Batisa LY3H in Elektrenai, Lithuania. Further information at http://ly3h.epalete.com/?p=303

The communications payload comprises:
- FM Morse Code Beacon 437.275 MHz LY5N
- FM Voice Repeater 145.950 MHz uplink (PL 67 Hz CTCSS) 435.180 MHz downlink
- AX.25 Packet Radio 145.850 MHz uplink 437.550 MHz downlink 9600

baud FSK, FM

LituanicaSAT-1 uses passive magnetic attitude control system consisting of permanent magnets that create a control torque and soft magnets that provide dampening torque using hysteresis effect. Following attitude sensors are implemented for attitude determination:
• PS-MPU-6000A MEMS motion sensor
• PS-MPU-9150A MEMS motion sensor
• L3GD20 MEMS three-axis digital output gyroscope
• HMC5883L three axes digital magnetometer

There are two computers in LituanicaSAT-1: the flight computer based on ARM Cortex-M4F microcontroller and secondary (back-up) computer based on Arduino ATMega 2560 microcontroller. These two computers and their periphery are laid out on different sides of one shared PCB. The flight computer is the central control unit of the satellite responsible for maintaining the normal operating mode of the satellite, monitoring and control of energy resources, control of attitude determination sub-system and performance of telecommands received from the satellite ground station in Lithuania.

The LituanicaSAT-1 team developed the secondary flight computer based on the open source hardware and software project named Arduino. This computer will ensure limited, however safe functionality of the satellite in case of failure of the main onboard computer and will also take and record the first pictures made by Lithuanians from space as well as control the radio beacon of the satellite.

There are 4 monopole antennas on LituanicaSAT-1: three UHF antennas and one VHF antenna. Each antenna is made of approx. 0.2 mm thick and 5 mm wide spring steel measurement tape. In deployed configuration, all UHF antennas are pointed towards the Z+ body axis direction and VHF antenna is pointed toward –Z body axis.

Tracking
In the days after deployment LituanicaSAT-1 will be very close to the International Space Station (ISS). To determine when you'll be able to hear the 437.275 MHz FM Morse code beacon look at the position of the ISS on either the ISS Fan Club website at http://issfanclub.com/ or the N2YO satellite tracking site at http://n2yo.com/ (tick the Draw footprint box).

Due to Doppler shift the beacon may appear to be +/- 10 kHz of the nominal frequency. Submit reception reports including small audio file or any other data online at http://www.kosmonautai.lt/en/data-submission/

Links
• Web Google English http://tinyurl.com/KosmonautaiLituanicaSAT-1
• Wiki Google English http://tinyurl.com/WikiLituanicaSAT-1
• Facebook https://www.facebook.com/Lituanicasat1

The LituanicaSAT-1 mission is specially dedicated to honor the 80th Anniversary of the flight across the Atlantic by Lithuanian-American pilots Steponas Darius and Stasys Girenas. Therefore the satellite bears the name of the original aircraft used during this historic flight – "Lituanica".

On July 15, 1933, Steponas Darius and Stasys Girenas took off from Floyd Bennett Field in New York in their airplane Lituanica and flew across the Atlantic Ocean, covering a distance of 6,411 kilometers without landing, in 37 hours and 11 minutes. Tragically they crashed by the village of Kuhdamm, near Soldin, Germany just 650 km from their destination of Kaunas in Lithuania.

[ANS thanks AMSAT-UK for the above information]

LitSat-1 with linear transponder deployed

The amateur radio CubeSat LitSat-1, call sign LY1LS, was deployed from the International Space Station (ISS) on Friday, February 28 at 0730 UT. It carries a 435/145 MHz linear transponder for SSB/CW communications.

The LitSat-1 team have issued this statement:

Our country Lithuania is heading towards a historic moment – start of the first Lithuanian satellite in space. First ever Lithuanian Cubesat Litsat1 was deployed from the International Space Station (ISS) on Feb 28 at 07:30 UT from the International Space Station (ISS).

We are very interested in getting the first data from our small satellite as soon as possible, therefore we would like to ask your help with that.

We will send special QSL cards for radio amateurs with first reports about received signals from our satellite. The 3 stations first received the signals from the LitSat1 satellite will receive QSL cards signed by the High level officials of the Lithuanian government.

Please send your SWL reports (screen snapshots) with received packet data of Litsat-1 beacon to Kaunas University of Technology Radio Club. Contact point E-mail: address: litsat(a)ktu.lt

Please find below the technical data for the reception of Litsat 1:
Beacon/TLM down link 145.850 MHz
Beacon RF packets are AX.25 UI frames
https://www.tapr.org/pub_ax25.html Main parameters of the beacon frames are: TX baud rate 9600 bps (G3RUH), repetition period ~4.5s, beacon duration ~0.5 s, source call address – TNC, destination call address – LY1LS.

Digital data: Telemetry
Digital communication with Litsat-1 is based on Helium 100 (HE-100) transceiver.
The payload info field starts with the 2 header bytes “Bb”=0×4262 (Beacon broadcast), following with 2 bytes indicating further data field length (should be 0×0087), then the sat status telemetry structure (114 bytes) and finishing with the short text message (21 bytes).

For any other information you are very welcome to contact us: litsat(a)ktu.lt

A linear transponder will be activated later.
Uplink 435.150 MHz LSB
Downlink 145.950 MHz USB
Bandwidth ±15 kHz from center
CW beacon   435.1375 MHz (LY1LS/B)
Normal mode – transponder, beacon OFF

73! Darius Kybartas LY3DA

Litsat-1 team
Kaunas University of Technology
Email: litsat(a)ktu.lt

LitSat-1 on Facebook https://www.facebook.com/palydovas

President Congratulates Lithuanian Amateur Radio CubeSat Builders
http://amsat-uk.org/2014/01/12/president-congratulates-amateur-radio-cubesat-builders/

Two Lithuanian Amateur Radio CubeSats Plan 2013 Launch To ISS
http://amsat-uk.org/2013/06/26/two-lithuanian-cubesats/

The other Lithuanian CubeSat deployed from the ISS on
Friday is LituanicaSAT-1 which carries a 145/435 MHz FM transponder.
http://amsat-uk.org/2013/04/12/lituanicasat-1/

The two Lithuanian groups built the CubeSats in 2013 which was the 80th anniversary of the historic flight by Lithuanian pilots Steponas Darius and Stasys Girenas in the airplane Lituanica. On July 15, 1933, they took off from Floyd Bennett Field in New York and flew across the Atlantic Ocean, covering a distance of 6,411 kilometers without landing, in 37 hours and 11 minutes. Tragically they crashed by the village of Kuhdamm, near Soldin, Germany just 650 km from their destination of Kaunas in Lithuania.

[ANS thanks AMSAT-UK for the above information]

ITF-1 CubeSat Team Request Reports

The amateur radio CubeSat ITF-1 (YUI) plans to launched from Yoshinobu Launch Complex at the Tanegashima Space Center on Thursday, February 27.

Toshihiro Kameda JJ3GRX reports: The data reception App for our satellite ITF-1 (YUI) is now available at the Google Play Store. You can find it with keyword “TSUMUGI” or “ITF-1?.

After deployment, the first path was right above western Europe from 7:20 pm on February 27 UT. It is before the path above Japan. We strongly want to obtain reception data. Report via the Web Form is greatly appreciated, but just e-mail “heard” would be very helpful.

The 1U CubeSat was built by students at the University of Tsukuba. The formal name ITF-1 comes from the initial letter of the university slogan “Imagine The Future”. The satellite also has a popular name YUI which means “bond” in Japanese, it came from the project’s concept, “Creating the Worldwide Human Community”.

ITF-1 has the callsign JQ1ZLO and the 437.525 MHz satellite beacon will send telemetry by a Morse Code audio tone on an FM transmitter running 300 milliwatts output.

The Project Manager is Ms. Ayano Okamura a fourth-year student of the College of Engineering Systems, School of Science and Engineering.

Preliminary Keplerian Two Line Elements (TLEs) ‘Keps’
http://yui.kz.tsukuba.ac.jp/wordpress_yui_2/wp-content/uploads/2014/02/ITF-1.txt

Detailed information is at
http://yui.kz.tsukuba.ac.jp/?page_id=1083&lang=en

Launch of Japanese amateur radio satellites
http://amsat-uk.org/2014/02/23/launch-of-japanese-amateur-radio-satellites/

[ANS thanks AMSAT-UK for the above information]

AMSAT at the Dayton Hamvention -- First call for volunteers

Last year, we had 41 people assist with the AMSAT booth at the Dayton. It was the efforts of those volunteers that made the 2013 Dayton Hamvention a success for AMSAT.

The interaction with AMSAT members, satellite operators, designers, and builders makes the whole experience for participants a lot of fun.

The 2014 Hamvention is May 16-18. Would you consider helping AMSAT at Dayton this year?

Whether you're available for only a couple of hours or if you can spend the entire weekend with us, your help would be greatly appreciated.

Please send an e-mail to Steve, n9ip at amsat dot org if you can help.

[ANS thanks Steve N9IP for the above information]

Free Online Course -- Space Systems Engineering 101

Space Systems Engineering 101, a new massive open online course from NASA and the Saylor Foundation, launches on March 3, 2014. The six-week general-audience course is free to the public and provides a unique opportunity to learn from and alongside NASA's engineers. Students who participate can earn a free certificate.

The course will feature lectures from NASA scientists and engineers and Google Plus Hangouts with NASA personnel. Winners of an optional project competition will receive a chance to tour NASA's Goddard Space Flight Center in Greenbelt, Md.

For more information and to register for the course, visit
http://www.saylor.org/2014/02/blog-announcement-space-systems-engineering-course-starts-march-3rd/.

Questions about this opportunity should be directed to
http://www.saylor.org/feedback/

[ANS thanks NASA Education Express Message -- Feb. 20, 2014 for the above information]

Free NASA Online Course -- Teaching Tomorrow's Engineers

NASA Educator Professional Development and the National Science Teachers Association have joined forces to create and offer this first-of-its-kind online course for middle school educators. Participants can earn a certificate acknowledging 15 hours of effort. Graduate credit is available for a fee.

Module 1: Introduction to the Engineering Design Process
Event Dates: March 26, March 31, April 7 and April 17, 2014

Module 2 (optional): Implementing the Engineering Design Process in Your Classroom
Event Dates: April 21 and April 28, 2014

For more information about the course and to register online, visit http://learningcenter.nsta.org/products/online_courses/NEScourse.aspx.

Questions about this series opportunity should be directed to John Entwistle at john.d.entwistle(a)nasa.gov.

[ANS thanks the NASA Education Express Message -- Feb. 27, 2014 for the above information]

Ham Video Commissioning now scheduled

The Ham Video transmitter, which is stored in the Columbus module of the International Space Station, will be installed March 6, 2014. The transmitter will be powered on briefly, just the time needed to check that the connection cables to the antenna, to the power supply and to the camera are installed properly. All control LEDs nominal, the transmitter will be considered ready for Commissioning and will be unpowered.

The first Commissioning step is planned March 8. Michael S. Hopkins KF5LJG will power on the Ham Video transmitter in configuration 1: ARISS antenna 41 Frequency 2.422 GHz Symbol rate 1.3 Ms/s The transmission will start shortly before the pass of the ISS over the Matera ground station in south Italy at approximately 13.29 UTC.

The ground station will stream the video over the BATC server http://www.batc.tv/ .Please select Member Streams and ISS.
During the pass, different configurations will be tested with ARISS antenna 41.

After the pass, the Ham Video transmitter will stay powered on in configuration 1 till the following Commissioning step, which is planned Sunday March 9, 2014 at approximately 12.40 UTC.

For about 24 hours, the DATV signal will be transmitted permanently, but the camera will be powered off. The reason is, that the camera is battery powered and no provisions are made for frequent battery replacement. This mode is called "blank" transmission.

During Commissioning step 2, different configurations will again be tested, this time with ARISS antenna 43. The Matera ground station will stream the video over the BATC server.

Possibly, blank transmissions will occur in the period between Commissioning step 2 and the following step, which is not yet

planned.
We will circulate Ham TV Bulletins to inform on blank transmissions.

Reports on reception of blank transmissions are very welcome.
Reports can be filed via this webpage:
http://www.spaceflightsoftware.com/ARISS_FSTV/submit.php
http://www.spaceflightsoftware.com/ARISS_FSTV/submit.php
Participants using the Tutioune receiving software, developed by
Jean Pierre Courjaud F6DZP, can record as well as stream detailed
parameters of the received signal. Please see:
http://www.vivadatv.org/ http://www.vivadatv.org/
Thank you for your participation

[ANS thanks Gaston ON4WF, Stefan VE4NSA and HamTV Bulletin #7 the
above information]

ARISS News

Succesful Contacts

+ A Successful contact was made between Exploration Place, Wichita,
KS, USA, and Astronaut Koichi Wakata KC5ZTA using callsign NA1SS.
The contact began 2014-02-28 16:24:0418:04 UTC and lasted about nine
and a half minutes.
Contact was direct via WØSOE. ARISS Mentor was W5IU.

Exploration Place offers visitors of all ages interactive
environments, hands-on experiences, Kansas' largest domed theater -
the Boeing Dome Theater and Planetarium - imaginative spaces, and
outdoor recreation, all located on a 20-acre site along the scenic
Arkansas River in downtown Wichita, Kan. www.exploration.org .
www.facebook.com/ExplorationPlace . www.Twitter.com/DiscoverAtEP

Mueller Aerospace and Engineering Discovery Magnet Elementary is
located in Wichita, Kansas. Mueller became an aerospace and
engineering magnet in 2008 and received a federal grant in 2010 to
support the magnet themes with new curriculum, professional
development, supplies and technology for teaching aerospace and
engineering with a STEM emphasis. It is the only aerospace magnet in
the state of Kansas and the first school in Kansas to identify itself
as a STEM magnet school.

The Wichita Amateur Radio Club, Inc., established in December, 1932,
is organized as a 501c3 Non Profit corporation. Its objectives and
purposes are to encourage the public to recognize the value of the
amateur radio service and enhance the voluntary noncommercial
communication service by providing emergency and other useful
communication; extend every amateur operator's ability to contribute
to the advancement of the radio art; improve the service by advancing
skills in the communication and technical areas; expand the number of
trained operators and technicians in the amateur radio corp.; and
enhance international gook will through amateur radio.

For this ARISS event these three entities are came together to
provide a unique opportunity for the students to speak to astronauts
on board the ISS. The contact would not have been possible without
technical assistance from the Wichita Amateur Radio Club, Inc.
Exploration Place has worked with Mueller Elementary for several
years on projects and is excited to once again provide this
opportunity with support from NASA.

+ A Successful contact was made between Musashino Elementary School of Hamura-shi, Hamura, Japan, and Astronaut Koichi Wakata KC5ZTA using callsign NA1SS. The contact began 2014-03-01 08:14:19 UTC and lasted about nine and a half minutes. Contact was direct via 8N1MA. ARISS Mentor was 7M3TJZ.

Hamura city is located in about 45 kilometers to west from Tokyo-to center, and is wrapped in naturalness around the Tama River.
The area is 9.91 square kilometers. The Tama River flows to the south from the west of city, and it's learned about as a town with an intake of the Tamagawa water supply excavated in the Edo Period.
The Musashino elementary school was founded in 1979 and 610 students are on the register now.

Upcoming ARISS Contact Schedule

Space experiments "about Gagarin FROM SPACE"
Centre Tourism and Youth Policy Ruzaevo Municipal District, Republic of Mordovia, direct via UB3UAD
Contact is a go for 2014-03-02 10:24 UTC

Space experiments "about Gagarin FROM SPACE"
Center of Space Communications, St. Petersburg, who are winners of the contest "Ask your question astronaut.",direct via RA1AJN
Contact is a go for 2014-03-03 09:33 UTC

Space experiments "about Gagarin FROM SPACE"
Secondary school ? 50 YA Gagarin Kursk, direct via RW3W
Contact is a go for 2014-03-03 11:09 UTC

Central Square Middle School Amateur Radio Club, Central Square, NY, direct via KC2ILA
Contact is go for: Mon 2014-03-03 14:05:15 UTC

Rock Bridge Elementary School, Columbia, MO, direct via KMØR
Contact is a go for: Wed 2014-03-05 14:00:13 UTC

[ANS thanks ARISS, Charlie AJ9N and David AA4KN for the above information]

Satellite Shorts From All Over

+ ITF-1 information right after deployment requested.

  JJ3GRX Toshi, project member of the satellite ITF-1 "YUI" launched on Feb.27, reports "As you may know, we have not succeeded to receive any signal from the satellite."

  We are gathering the information especially before 1st reach to Japan.

  If you monitored 437.525MHz between 19:13 - 20:15 Feb.27 (UTC), please report the information.

  "Monitored the freq. but no signal" is now very precious information for us. If it is the case for many stations, we must consider the power supply problem.

  Providing the information is greatly appreciated.

[ANS thanks Toshihiro KAMEDA, JJ3GRX for the above information]

+ Owen Garriott (W5LFL) will speak about his experiences on Skylab at the National Air and Space Museum on March 13. Tickets are free but must be reserved at
http://airandspace.si.edu/events/detail.cfm?id=9565
[ANS thanks Dan Schultz N8FGV for the above information]

+ CQ-DATV 9 (March) is now available for download from
http://www.cq-datv.mobi/ebooks.php.

+ Celebrating Cosmonaut Yuri Gagarin's 80th Birthday

Keep an ear open during the entire month of March for Russian special event station UE 80 HS.

This operation is being held to celebrate the 80th anniversary of Russia's first astronaut Yuri Gagarin who was born on March 9th 1934.

Gagarin was the first human to journey into space when his Vostok spacecraft completed an orbit of the Earth on April 12th, 1961.

If you work UE 80 HS, please QSL via RW 6 HS.

[ANS thanks the Ohio/Penn DX Bulletin for the above information]

+ Satellite Activation Planned From Isle of Lewis

Members of the Camb-Hams will once again be active as GS3PYE/p, but this time from the Decca cottage, on the Isle of Lewis (IOSA OH01, SCOTIA HI21, WLOTA 1477, Outer Hebrides, between April 26th and May 3rd. Activity will be on 80-10 meters using five stations on the air, simultaneously, and all capable of running the legal power limit from five amplifiers. Also, look them on 6m and 4m which has a great take-off to the UK and Europe using the legal power limit. With the success of EME in the past years, the group plans a 2m and 23cm EME station with a focus on 23cm. There will also be 2m/70cm Satellite activity. QSL via M1ACB. For more information and updates, visit:
http://dx.camb-hams.com

[ANS thanks Ohio/Penn DX Bulletin No. 1152 for the above information]

/EX

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership

information.

73,
This week's ANS Editor,
EMike McCardel, KC8YLD
kc8yld at amsat dot org